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Elridge A. Stafford
Executive Director-
Federal Regulatory

USWEST

November 1, 1999

EX PARTE

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 Twelfth Street, SW, TW-A325
Washington, D.C. 20554

RE: Service Rules for the 746-764 and 776-794 MHz Bands,
WT Docket No. 99-168

Dear Ms. Salas:

Please be advised that today, on behalf of U S WEST Wireless, LLC, Peter Cramton, an auction expert from Market Design, Inc., and the undersigned met with Mark Rubin, Mark Bollinger, Diane Conley, Brett Tarnutzer, Kathleen Hahn of the Wireless Telecommunications Bureau, and Evan Kwerel of the Office of Plans and Policy to discuss issues concerning the above-captioned proceeding. Attached hereto is a copy of the presentation material that was distributed and discussed at this meeting.

In accordance with Section 1.1206(b)(2) of the Commission's rules, the original and one copy of this letter are being filed with your office. Acknowledgement and date of receipt of this transmittal are requested. A duplicate of this letter is included for this purpose.

Please contact me at (202) 429-3134 should you have any questions concerning this matter.

Sincerely,

Elridge Stafford

Attachment

cc: Mark Bollinger
Diane Conley
Kathleen Hahn
Evan Kwerel
Mark Rubin
Brett Tarnutzer

Design of the 60-69 Channel Auction

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November 1, 1999

commenting on behalf of
U S WEST Wireless, L.L.C.

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Outline

- Design objectives
- Recommendations
- Design issues
  - Band plan
  - National license or national bid
  - Spectrum cap
  - Incumbents
- Conclusions

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Design Objective

- Primary objectives
  - Efficiency
    - Place scarce spectrum in the hands of those that can use it best
  - Competition
    - Enhance competition in the provision of wireless services
    - Promote development of innovative services
- Secondary objectives
  - Diversity
    - Encourage new entry and a diversity of service providers
  - Revenues
    - Receive the market value for the spectrum

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Design Issues

1. Band plan
2. National license or national bid
3. Spectrum cap
4. Incumbents

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Recommendations

- Allocate the 36 MHz available to one 24 MHz national license and one 12 MHz band (two 6 MHz paired) carved into 52 MEA licenses or 5 REA licenses
  - Auction single national 24 MHz band license to facilitate entry of a new nationwide competitor
    - Minimum efficient size for new entrant is 20 MHz; hence, up to 4 MHz could be allocated for narrowband applications
  - Allow individual MEA or REA bids for 12 MHz licenses
  - Alternatively, use simple combinatorial techniques to allow national bids for 24 MHz, which is licensed on a MEA or REA basis
- Apply spectrum cap to 24 MHz national license to enhance competition in the market for mobile voice and data services; exempt 12 MHz MEA licenses from spectrum cap to allow larger carriers and incumbents to meet needs for 3G transition and additional capacity
- Encourage efficient relocation of spectrum incumbents
  - Relocate channel 59 incumbents too to allow use of channels 60-62

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Design Issue 1: Band Plan

- Recommendation of single 24 MHz national license and 52 12 MHz MEA licenses (or 5 12 MHz REA licenses)
- 24 MHz national license would enable a viable new entrant that could introduce a full range of voice and data services, including innovative high speed data applications, with the efficiencies of a nationwide system to effectively compete
- 12 MHz MEA licenses could be used to meet needs for 3G transition or for supplemental capacity
  - Could be disaggregated by winner for unpaired use
- Minimum efficient size for new entrant is 20 MHz; hence, up to 4 MHz available for narrowband use
- Simplest auction design and implementation

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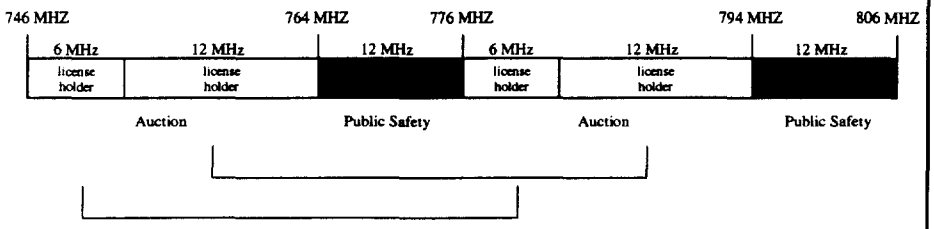
Band Plan: Option 1



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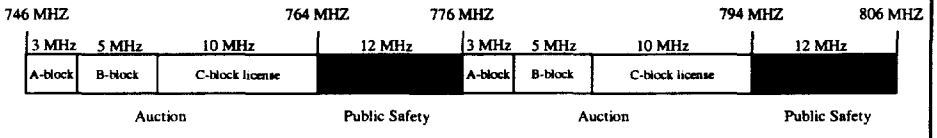
Band Plan: Option 2



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Design Issue 2: National License or National Bid

- History of cellular and PCS demonstrates efficiency of nationwide services
  - Large economies of scale and scope
    - Marketing service to consumers
    - Support for equipment solutions from manufacturers
    - Economies from nationwide service more important in 60-69 than in PCS, since only 36 MHz is offered, not 120 MHz
- A new national competitor is possible only if 24 MHz band is auctioned in a single license or allowing national bids
  - With individual bids on MEA licenses:
    - Incentive for demand reduction prevents nationwide winner
    - Exposure problem may prevent participation by nationwide bidders (e.g., MCI in PCS)
  - Auction efficiency and revenues are enhanced by national license or national bids

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Design Issue 2: National License or National Bid

- Alternatively, combinatorial auction techniques can allow nationwide bids without distorting the auction
  - Nationwide bidders are neither favored nor discouraged
  - Regional bidders are neither favored nor discouraged
- Techniques involve a new activity rule that involves "superset" restrictions
  - Techniques are simple and easily implemented in this case of a national bid and individual MEA or REA bids
  - Techniques represent an "evolutionary" design enhancement from the current simultaneous ascending auction used by the FCC

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Combinatorial Auctions with an Enhanced Activity Rule

Note: The slides on combinatorial auctions are drawn from "Method and System for Combinatorial Auctions with Bid Composition Restrictions," a patent application filed on October 12, 1999, by Market Design Inc. (Preston McAfee and Paul Milgrom, Inventors). MDI intends to license this technology to the FCC without fee.

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Combinatorial Auctions

- Exposure problem in simultaneous ascending auction (SAA)
  - When package bids are not allowed and some licenses are complements, efficient aggregations are discouraged by SAA
  - Bidder is reluctant to bid for synergistic gains if there is a significant risk that the synergistic gains will not be realized (aggregation of complementary licenses will fail)
- Free-rider problem in SAA with package bidding
  - When package bids are allowed, bids for larger aggregations are favored, since bidders for individual licenses face a free-rider problem: each individual bidder hopes that the other individual bidders will raise their bids so that the sum of the individual bids tops the package bid
  - Those bidding for individual licenses have an incentive to hold back, letting others "do the work" of topping the package bids
- Elimination of the exposure problem creates the free-rider problem

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Combinatorial Auctions: Example of the Free-Rider Problem

Table 2: Bidder values		
	Lot A	*Lot B*
Bidder 1	50	0
Bidder 2	0	35
Bidder 3	40	40

- SAA is efficient in this case
- SAA with package bidding is likely inefficient

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Combinatorial Auction: SAA with Enhanced Activity Rule

- Standard SAA uses an additive activity rule
  - Bidders must be active in each round on a sufficient quantity of spectrum (i.e., so many MHz-pops)
  - A bidder is active on a license in the current round if it places a valid bid or was the standing high bidder in the prior round
  - Total activity is simply the sum of the MHz-pops for each license bidder is active
  - A bidder must be active on at least a specified percentage of its eligibility (e.g., 90%) in each round or its eligibility is reduced
- SAA can allow package bids if an enhanced activity rule is used
  - Activity for package bids depends not only on licenses covered but also on the sets that contain them

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Design Issue 3: Spectrum Cap

- Spectrum cap rules are currently necessary and efficient means to promote and protect competition in CMRS markets
  - Excessive aggregation of spectrum in the hands of a few national carriers could preclude development of competing systems
  - Significant merger activities in wireless industry add to concern of market concentration
- FCC extended spectrum cap to certain SMR licenses because services using SMR technology are nearly identical to those offered using broadband PCS and cellular licenses
- Similarly, the 746-764 and 776-794 MHz bands can be used for mobile voice and data services nearly identical to the services using cellular, PCS, and SMR licenses

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Design Issue 3: Spectrum Cap

- Spectrum cap can assure that the allocation will lead to at least one new national entrant
- Spectrum cap is essential if a simultaneous ascending auction is used
  - In an ascending auction, tentative winners must be identified after each bidding round
  - Need a bright-line test to determine if tentative winners are eligible to win
- Limiting spectrum cap to 24MHz band (exempting the 12 MHz licenses from the cap) allows larger carriers and incumbents to meet needs for 3G transition and additional capacity

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Design Issue 4: Incumbent Broadcasters

- Broadcasters have demonstrated that UHF analog TV is not the efficient use of channels 60-69
  - Few instances of channels 60-69 in operation, even in major cities
    - New York City: none in operation
    - Dallas: none in operation
    - Detroit: Channel 62 (WWJ)
    - Houston: Channel 61 (KZJL)
    - Washington: none in operation
  - Value of UHF analog TV is falling as other alternatives are expanding
    - Cable, DBS, DTV
  - Value of wireless communications services is growing rapidly in digital economy
  - However, incumbent broadcasters can cause severe interference to low-power entrants
    - A single UHF station can cause interference for 18 MHz in a 100 mile radius???

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Design Issue 4: Incumbent Broadcasters

- Cannot use efficient relocation techniques as in PCS
  - Broadcasters have "right to stay"; relocation must be voluntary
  - No space to relocate in UHF band, since used for DTV
- Market-based solution does exist and can be implemented
  - Private market gets (most) broadcasters to commit before the auction to terminate after a specified number of years
  - Incumbent receives the market value of an "option to terminate" plus a payment the incumbent determines before the auction for terminating after specified number of years
  - Since private market is outside of the FCC, the market for termination options can be developed by private parties in the time available

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Conclusions

- *"Make markets work better!"*
- Adopt band plan of single national license (or national bid) of 24 MHz and MEA licenses of 12 MHz
- A nationwide license (or national bid) of sufficient spectrum (24 MHz) will allow a new entrant, enjoying the efficiencies of a national system, to offer innovative voice and data offerings in competition with the few national wireless competitors (as well as providing alternatives to incumbent wireline voice and data services)
- Spectrum cap for the 24MHz national license will ensure the most efficient use of spectrum; exemption from the cap of the 12 MHz band will provide spectrum needed for 3G and added capacity for large carriers and incumbents
- Adopt incentives for facilitating relocation of incumbent broadcasters

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Back-up Slides

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